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Cumulative disadvantages of non-employment and non-standard work for career patterns and subjective well-being in retirement

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Abstract:

This paper investigates how cumulative disadvantages of non-employment and non-standard work are affecting careers and subjective well-being of older Europeans from 13 countries. In previous research, unemployment, labour market inactivity and part-time work had negative effects, however they were seldom addressed in a common study and over the whole career. In two complementary analyses, first, the employment history of older Europeans is analysed with sequence analysis methods to show how non-employment and part-time work shape careers and to illustrate gender differences. In a second step, adverse career components are used to exemplify cumulative disadvantages on subjective well-being in old age. Data from the Survey of Health, Aging and Retirement in Europe (SHARE) is used for the analyses. After optimal matching and clustering of the retrospective employment history, the results indicate that women experience more turbulent careers with more periods of non-employment and part-time employment. The analyses of subjective well-being show that labour market inactivity and unemployment have negative effects in old age for men, but less for women. Part-time employment has a differentiated effect for women, however not for men.

Keywords: Sequence analysis, subjective well-being, SHARELIFE, cumulative disadvantages, welfare states, unemployment

Introduction

Employment provides a major source of identity formation, social status, participation in the society and access to material resources. Hence, it is crucial for ones' well-being (van der Noordt, IJzelenberg, Droomers, & Proper, 2014). A large body of literature has investigated the importance of employment for the objective and subjective well-being of individuals. Repeatedly, the conclusion is drawn that joblessness and non-standard work are negatively related to different indicators of individual well-being in the short and in the long run. However, developments before and after adverse employment situations are often not considered and hence create blind spots in the bigger picture. As a result, career dynamics could be underestimated thus leading to imprecise assumptions about stability of negative effects of unemployment, labour market inactivity or non-standard employment. The present paper wants to fill this gap by analysing how non-employment and non-standard work shape the career and generate different career patterns.

On account of this, a sequence analysis of employment histories is performed to identify when joblessness in a career occurred and if it recurred over the life course. This allows us to take a more holistic view on those careers, which deviate from the standard full-time employment. Sequence analysis provides us with the best analytical tool to trace career patterns because these analyses encompass the entire time frame and are not limited to the analysis of transitions such as the school-to-work, unemployment-to-employment, work-to-childcare or work-to-retirement. Furthermore, analysing subjective well-being in old age provides us with complementary data regarding the outcome of adverse employment histories. Since the labour market trajectories are notably different for men and women, gender differences are also taken into consideration. Rich longitudinal life-course data is necessary to carry out these analyses. The Survey of Health, Ageing and Retirement in Europe (SHARE) is ideal for the following analytical steps: Not only does it provide retrospective annual data on employment history, it also includes prospective panel data on older Europeans in a variety of life domains. Further, the SHARE data allows a cross-country comparison of the different effects in the respective welfare regimes.

The paper proceeds as follows: Following an overview of gender differences in labour market participation, studies on gendered career patterns utilising sequence analysis are presented, the theory of cumulative advantages/disadvantages is discussed, two mechanisms are illustrated, and its pertinence for the present empirical study is described. Thereafter follows a closer look on three disadvantageous employment statuses (for both men and women) and their negative effects on careers and well-being. The data included in the present analyses are introduced, and the methods of sequence analysis are described. Results of the

sequence analysis of employment data from 13 European countries are presented, and the findings are summarised. In conclusion, implications of these findings for research on cumulative disadvantages are described.

Gendered labour market participation in different country contexts

As careers are embedded in the labour market context, they are inherently affected by the shape of welfare states and national labour policy. For cohorts born in the 1940s and 1950s, this means that major differences in the frequency of non-employment and non-standard work are found for men and women. Labour market attachment of men was generally higher compared to women. Men were more often highly educated, entered the labour market earlier and experienced upward mobility more quickly. Women, on the other hand, were less educated, tended to access the labour market in lower occupational categories and had many more employment breaks for child rearing and care. Even if they returned to labour markets it was rarely for full-time employment. Through educational expansion, women gained educational attainment and therefore entered the labour force in greater quantities (Percheski, 2008). However, the relevance of female labour force varies heavily by welfare regime.

Grunow, Hofmeister, and Buchholz (2006) showed that female labour force participation of the 1950s birth cohorts was higher in West Germany and the US compared to the cohorts of the 1940s, but for different reasons. While in West Germany female labour force participation was becoming increasingly socially accepted, the relatively high female employment in the US was a product of the necessity of another income due to the rudimentary welfare state and low support in times of inactivity (Grunow, et al., 2006, p. 123). In the conservative welfare regimes, like Germany (Esping-Andersen, 1990), the centration on the male breadwinner tradition operated through restriction to the occupationally segmented labour market. Although women of the older cohorts did enter the labour market, occupational mobility was more difficult (Manzoni, Härkönen, & Mayer, 2014). In Germany, high taxation of dual incomes penalised full-time employment of married women. This marginalised women to non- or part-time employment as disincentives for full-time employment are coupled with lack of institutionalized childcare. As a long-term effect, financial dependency of women prevails also in retirement (Fasang, Aisenbrey, & Schömann, 2013). Other countries that are classified as conservative welfare regimes are Austria, Switzerland, Belgium, the Netherlands and France and show similar employment patterns of women (Kammer, Niehues, & Peichl, 2012). In Austria, women's employment patterns vary by educational level. However, the gap between lower and higher educated

women is converging, as public policy incentives encourage mothers with higher education to enter part-time employment instead of full-time jobs. At the same time, housewives are socially less accepted and lower educated households need an additional income (Berghammer, 2014). Also in Switzerland gender stereotypical employment patterns prevail, where men are mostly full-time employed and women experience inactive episodes and part-time employment. They are tightly connected to traditional family patterns, i.e. married with 1 to 2 children (Madero-Cabib & Fasang, 2016). Belgium and the Netherlands, as well as France fall out of the classification depending on variables of interest. Kammer, et al. (2012) show that the redistributive measures of the Belgian and Dutch state oscillate to the social democratic universalistic principle but with a conservative type gendered labour market. France however supports a dual earner household (Möhring, 2016) and offers easier access to childcare, hence enabling female employment much easier. The mainly similarity of conservative type welfare regimes is found in their strong status preserving mechanisms, which also shape labour participation.

In Southern welfare states, like Italy, Greece and Spain (Ferrera, 1996), the gendered employment patterns are paired with a strong employment protection (Layte, Levin, Hendrickx, & Bison, 2000), which creates an insider/outsider system. It is based on the advantage of married men and the disadvantage of the young, women and higher educated. Restricted access to jobs and housing produces difficulties to exit unemployment, especially for women (Bernardi, Layte, Schizzerotto, & Jacobs, 2000). What distinguishes the Southern welfare states from the conservative welfare states is that the family is the unit of redistribution. Full-time employment of women is difficult as particularly young women are obliged to take part in household duties. If at the same time access to employment is restricted, the labour market participation drops to low. Lyberaki, Tinios, and Papadoudis (2013) confirm these assumption. They find a divergence of women's employment histories in mostly non-participation and mostly full-time employment in Europe. The first is more strongly associated with Southern European countries, the latter is found more frequently in Northern and Eastern European countries. Former socialist countries as well as countries of the socio-democratic welfare regimes both fostered inclusion of women in the labour market. However, the welfare state designs and measures are generating different forms of labour markets. Whereas in Northern countries universalistic coverage of social security and early expansion of the service sector allow flexible careers; high regulation of careers and a gendered division of unpaid work characterises former socialist countries (Hofäcker & Chaloupková, 2014; Pascall & Manning, 2000). In the latter, childcare and social security was based on the employment status rather than on civil rights. Since the beginning of the 1990s the Central and Eastern European states undergo a transformation diverging from a

unifying socialism to different market economies. However, the norm of female employment seem to prevail (Hofäcker, Stoilova, & Riebling, 2011; Möhring, 2016).

To summarize, gender differences in labour market participation are varying between welfare regimes. Although, the degree of decommodification impacts the necessity of female labour, labour market policy also sets incentives or disincentives for employment for women. In all welfare regimes full-time employment seems to be the expected career of men. However, deviations are anticipated rather in times of recessions or like in the Southern welfare regimes through a strong insider/outsider barrier. It is also known that certain policy instruments and organisational structures impact careers (Biegert, 2011; Layte, et al., 2000; Wulfgramm & Fervers, 2015). However, this goes beyond the scope of this paper. Instead, the next sections present current research on the composition of careers and the role of disadvantages.

Gendered experience of non-employment and non-standard work

Aside from hypothesis testing methods, career patterns can be investigated with methods of sequence analysis. This way, careers can be observed in their own dynamics. These following studies show that even with increasing participation of later cohorts in the labour market, full-time careers of women were still unusual in Germany. Biemann, Zacher, and Feldman (2012) investigated career patterns of men and women born around 1950 with the SOEP (German Socio-Economic Panel). They reviewed 20 years of labour market activity and concluded that mostly older cohorts and men experienced a full-time stable career, while women's career patterns are more dissimilar. They identified, amongst others, clusters with full-time careers that change into part-time careers, mostly part-time dominated clusters, and a cluster including instable careers with recurrent unemployment. The latter was mostly associated with married women and mothers. Further studies have confirmed the more turbulent careers of women. Huang and Sverke (2007), using Swedish longitudinal administrative data covering 27 years of employment history for women born in the 1950s, found that women experienced mostly full-time and stable careers as well as upward mobility careers and horizontal mobility, with fewer women experiencing instable patterns. These results are in line with the observation of Lyberaki, et al. (2013) mentioned above. However, even in Sweden's rather gender equal labour market, a large proportion of these women were employed in typically female jobs like care, education or office work (Huang & Sverke, 2007, p. 390).

Although men did not experience an equally strong increase in labour market participation as did women, their careers have also been subject to change. With data from the retrospective German Life History Study, Biemann, Fasang, and Grunow (2011) show that men's careers became less stable and increasingly mobile. Men belonging to the 1955 cohort show less "stability" in the sense of remaining with their first and second employer than men born in the 1930s or 1940s, but they experience a somewhat stable upward mobility than earlier or later cohorts. Recurring unemployment is found more often in younger than in older cohorts. Women experience similar patterns, with an additional care-giving pattern that is less frequent for younger cohorts. With SOEP data Simonson, Romeu Gordo, and Titova (2011) emphasised the divide in the norm of women's employment in West and East Germany. They find that the baby boomers in West Germany have been experiencing more part-time employment and non-participation in the labour market. In East Germany, full-time employment careers have been much more common but, even for these women, part-time employment dominated careers have been on the rise. Like Grunow, et al. (2006), they come to the conclusion that baby boomers entered the labour market to a greater extent than earlier cohorts, but their careers (especially in West Germany) rarely resemble a full-time employment history; instead, baby boomers increasingly entered the labour market via part-time employment.

The differentiated employment patterns of men and women are reflected in their entry to retirement. With SOEP data, Zähle, Möhring, and Krause (2009) detected six clusters of retirement transitions in Germany for cohorts born between 1937 and 1941. They find that for West German women, labour market inactivity is the most frequent employment status before retirement (43.1%). On the other hand, most East (38.9%) and West German (28.7%) men and East German women (39.7%) retire from unemployment[1]. Even tough 20.4% of men retired from full-time employment, this number for women is very low and statistically negligible. Hence, before regular retirement entry, women are less attached to the labour market than men. This contributes to their more complex career patterns. However, Fasang, Geerdes, and Schömann (2012) reached the conclusion that even though retirement patterns are differentiated in different welfare systems, they can generate similar levels of income inequality in old age.

While career patterns or career-related transitions are often the subject of research, few studies have investigated the associations of differentiated careers with objective and subjective well-being. Johansson, Huang, and Lindfors (2007) found that different career trajectories (until age 43) are associated with psychological well-being for a cohort of

[1] However, this did not lead to gender differences in early retirement rates.

Swedish women. Career-oriented women showed the highest subjective well-being, and working mothers expressed the lowest subjective well-being. The early mothers that entered the labour market in full- or part-time employment are somewhat in between. Sabbath, Mejía Guevara, Glymour, and Berkman (2015) studied the mortality risk dependent on work-family profiles of American women. They perform optimal matching and clustering procedures with the Health and Retirement Study (HRS) to establish seven profiles of women and predict mortality risk. The results show that single mothers and nonworking mothers are at highest risk, while married mothers with later entry to the labour market have the lowest risk of mortality before the age of 75. Additionally, Madero-Cabib and Fasang (2016) show a disadvantage in retirement incomes for work-family patterns that centre on traditional male full-time employment and females as carers.

Cumulative advantages/disadvantages theory and the importance of timing and duration

The theory of cumulative advantages/disadvantages (CAD) has been frequently used to explain the negative effects of unemployment and non-standard work over the life course. It suggests that inequality in old age is a result of long-term social processes (Dannefer, 1987; DiPrete & Eirich, 2006). Hence, two notions are important in this context: social processes and the life course. Concerning the first notion, CAD assumes that advantages and disadvantages are socially structured and individuals are exposed to them. This can include systems operating at the micro and macro level. Dannefer (2009, p. 194) refers to 'systemic tendencies for interindividual divergence'. Human agency, in the broader framework of the CAD, serves merely as a way to counteract disadvantages (Schafer, Pylypiv Shippee, & Ferraro, 2009). As a result, for those with a favourable starting position, the accumulation of benefits will be easier. Individuals with initial disadvantage might not be able to catch up or are impaired in their life-course achievements. This can already start with childhood conditions, like access to primary education and health care. Hence, advantages and disadvantages are not necessarily a product of performance or merit. The second notion includes the life course perspective. Differentiation operates over an individual's life. The main assumption implies that initial disadvantage prevents access to future resources and therefore leads to inequalities between individuals. Ferraro and Pylypiv Shippee (2009) emphasise that advantage is not the mere opposite of disadvantage. Not only does the disadvantageous situation have to be overcome, these individuals also have to catch up to their advantaged peers. They must invest more effort to achieve the same position while some opportunities are barred to them. These initial disadvantages can create further

disadvantages. Merton (1988) coined these processes the *St. Matthew Effect*. The designation refers to the biblical verse and points to the accumulative character of advantages and disadvantages. His original observation of a skewed rewarding system in science has repeatedly been applied as *scarring effect*.

Although the concept of accumulative disadvantages is widely used, the mechanisms of are not fully identified. Over the life course, they could be enforced in two ways. First, through disadvantages at a crucial point in the life course or during a period in which change is anticipated. For example, the end of schooling, before childbirth, after the first job or before retirement (Elder, 1998). Kohli (1994) theorises that in the tripartite life course (*Normalbiographie*) the edges of the three parts, education, working age and retirement, are more fragile regarding breaks and adversities (Kohli, 1994, p. 222). For example, unemployment after school completion could lead to taking low-paid, insecure jobs, because the individual does not have other options or resources. Hence, upward mobility will be difficult or takes more time. However, if unemployment occurs in the course of the career, catching up could be easier as the individual already has resources that make fast reemployment feasible. This mechanism is hereby named *timing*. The second mechanism that could increase inequality in old age is repeated or long-term exposure to a disadvantageous situation; it is termed *duration*. Not only may the adverse timing of disadvantage play a role, but also the length of exposure. While duration is often considered first when examining cumulative disadvantages, timing plays a crucial role in the life course. As demonstrated by Wheaton and Reid (2008), the increasing duration in non-employment exerts negative effects on mental health for women, but they also found that the timing has long-term consequences. Hence, both mechanisms can generate inequality in old age and inequality of life courses. In the empirical part of this paper, both are addressed separately as they could be interdependent.

Negative effects of unemployment, labour market inactivity and part-time employment

In this section, three adverse employment statuses are highlighted to exemplify the mechanisms of cumulative advantages/disadvantages theory. Considering the previous section, the review of negative effects of unemployment, labour market inactivity and part-time work will serve as background for hypotheses on subjective well-being in old age. Negative effects of unemployment are the subject of a vast amount of research. The concept of cumulative disadvantages has been widely applied to unemployment, because (especially involuntary) unemployment could be a break in a career, possibly leading to downward job or

income mobility, stigmatisation (Blau, Petrucci, & McClendon, 2013) or social exclusion. In line with the timing mechanism, previous research has shown that unemployment in adolescence and early adulthood increases the risk for further unemployment in the life course (Brandt & Hank, 2014; Chauvel, 2010; Ellwood, 1982; Gangl, 2004). Further, negative effects of unemployment are documented for accumulating pension (Dewilde, 2012) and wealth (Frick & Grabka, 2009). Not only is unemployment negatively associated to career patterns and financial outcomes; the experience of unemployment is negatively related to health (Alavinia & Burdorf, 2008; Eggs, 2013), mortality (Roelfs, Shor, Davidson, & Schwartz, 2011) and depression (Berchick, Gallo, Maralani, & Kasl, 2012; Gallo, et al., 2006; Jefferis, et al., 2011; Riumallo-Herl, Basu, Stuckler, Courtin, & Avendano, 2014). A large body of literature has repeatedly shown that job loss is also harmful to the subjective well-being of individuals (Clark, Diener, Georgellis, & Lucas, 2008; Clark & Oswald, 1994; Whelan & McGinnity, 2000; Winkelmann & Winkelmann, 1998). In some studies, this negative effect was still persistent even after reemployment, which confirms the long-term and causal effect of unemployment. (Clark, Georgellis, & Sanfey, 2001; Strandh, Winefield, Nilsson, & Hammarström, 2014).

The possible negative effect of labour market inactivity is rarely analysed because the concept of labour market inactivity includes persons that are voluntarily not in the labour force[2] (e.g. homemakers), persons with disabilities or sickness, persons in short-term contracts and so on. The heterogeneity of this population makes it difficult to analyse the advantages or disadvantages of this status. However, it is worthwhile to study episodes of labour market inactivity in terms of cumulative disadvantages for two reasons. First, labour market inactivity could be hidden unemployment. Erlinghagen and Knuth (2010) showed that the self-identification of labour market inactivity or unemployed in survey data could be dependent on institutional settings or only temporary, leading to the under- or overestimation of the frequency of these concepts within a country (see also Biegert, 2011). Second, labour market inactivity might be similar to unemployment in that persons are jobless, do not have labour market income and could be facing problems to re-enter labour markets later. This poses fewer problems if the inactivity is temporary, voluntarily permanent and secured by financial resources. However, it could be problematic if inactivity is involuntary and stable. The rationale to look at labour market inactivity, thus, is to observe if the time an individual spends out of the labour force shapes the life course and, in the end, impacts the subjective well-being. The negative effects of labour market inactivity on well-being have been seldom addressed. One example, however, is provided by an OECD

[2] Retirement and educational/training program participation are usually also included in the assessment of labour market inactivity. In this study, these are considered as separate categories.

study, which documented the negative impact of inactivity besides unemployment on mental health of prime age workers in 5 countries (OECD, 2008). Moreover, labour market inactive and disabled men and women reported lower subjective well-being levels compared with employed men and women; with female homemakers reporting higher well-being than employed women (Stam, Sieben, Verbakel, & de Graaf, 2015).

Hence, these theoretical considerations lead to the formulation of two main hypotheses concerning adverse timing and duration of unemployment and labour market inactivity. For the timing hypothesis (H1), it is assumed that non-employment in the beginning of the career (age 15-24) is more harmful than during the course of the career (age 25-49) or towards the end of the career (age 50-60) because it can translate to later disadvantages. The duration hypothesis (H2) states that subjective well-being will be lower with increased length of time and more numerous periods of non-employment.

Part-time employment is largely considered as non-standard employment because it deviates from the full-time employment careers (Kohli, 1994). However, it is not necessarily negative. Part-time employment offers a possibility to balance work and parental obligations (Beham, Präg, & Drobnič, 2012) or to reduce working hours in older age. Yet it could also reflect difficulties to access full-time employment (Cai, Law, & Bathgate, 2014). The reasons for part-time work are different for men and women (Fouarge & Muffels, 2008): Women work fewer hours to reconcile care obligations and employment while men are part-time employed if they are in training or unable to find a full-time job. Hence, part-time employment of women is much more stable than that of men and even possibly desired. Nevertheless, in terms of wages and career possibilities, Fouarge and Muffels (2008, 2009) find several scarring effects of part-time employment. Part-time employment reduces an individual's chances to enter full-time employment, and wage levels stay lower even upon entry to full-time employment, because workers might have to catch up due to seniority or are placed in lower paid jobs. Additionally, part-time employed women have a higher probability to enter non-employment compared to full-time counterparts (Blázquez Cuesta & Moral Carcedo, 2014). Therefore, it is not clear if part-time employment will have a scarring effect on subjective well-being, as it might be the desired option for (mostly) women who juggle career and care but also deprive them of income and job mobility. For men, part-time employment could be a stepping stone or a trap, but the relevance of part-time employment is lower in men's careers; therefore, it might not have any impact in general. Consequently, no expectations are formulated for the effects of part-time employment.

While it is uncommon to formulate hypotheses for the sequence analysis; from the literature review in section 2, it can be expected that careers are different for men and women.

Specifically, women experience more exits and re-entries to the labour market and more non-employment and part-time work than men.

Method

Data

The Survey of Health, Ageing and Retirement in Europe (SHARE) is a longitudinal survey examining the lives of the older European population at age 50+ and has been described in detail elsewhere (Börsch-Supan & Jürges, 2005). Since 2004, five waves were conducted that included more than 85,000 individuals and their partners in 19 countries. By providing a vast range of modules that cover almost all aspects of older Europeans' lives, SHARE is well suited to study this population. SHARELIFE is the third wave (2008/09) that traces the lives of the respondents from wave 1 (2004/05) and wave 2 (2006/07). This wave deviates from the regular modules and is a retrospective study of the life history including employment history. Retrospective data sets offer excellent research opportunities. They not only save time and costs in the process of data inquiry, they are also not affected by panel attrition. Nonetheless, they suffer from certain limitations like memory bias or selectivity due to mortality. The SHARE team has addressed these issues in the data collection and ex-post testing. For instance, the use of the Life History Calendar as a guideline for the interviews decreases memory bias as it relates events to a timeline (Schröder, 2011). Havari and Mazzonna (2011) have confirmed the internal plausibility and historical adequacy of the SHARELIFE data. Manzoni, Vermunt, Luijkx, and Muffels (2010) find that shorter episodes are more easily forgotten in retrospective data. However, in this data, one data spell comprises a year, and the main activity of at least 6 months in this year defines the employment status. Therefore, the risk of memory bias is diminished.

Brugiavini, Cavapozzi, Pasini, and Trevisan (2013) and Antonova, Aranda, Pasini, and Trevisan (2014) transformed the employment history variables into a long data format, the Job Episodes Panel (JEP), which includes all relevant information on employment history from wave 1 to 3. Additionally, the data were checked thoroughly for consistencies and plausibility by the author. In a next step, this data is used for the sequence analysis. Wave 3 does not include the regular modules; therefore, the regression analysis of life satisfaction in old age incorporates the wave 2 data and employment history of the JEP[3]. The sample

[3] Although the employment history is surveyed after the dependent variable, the chronology of events is in the right order. Since SHARELIFE does not provide current information and only retrospective events, it cannot be

consists of 3,912 women and 4,186 men from 13 countries (Austria (AT), Germany (DE), Sweden (SE), Netherlands (NL), Spain (ES), Italy (IT), France (FR), Denmark (DK), Greece (GR), Switzerland (CH), Belgium (BE), Czech Republic (CZ), and Poland (PL)) who have finished their professional careers and are in retirement. The JEP provides the annual sequences of the employment history. For the sequence analysis, the labour market status at a given age was deducted from the self-identification of current activity of at least 6 months. Activities include education, full-time and part-time employment, unemployment and retirement. However, these items did not cover all the person years in the JEP. If a person was outside the labour market, but was not unemployed, in educational/training programmes or retired, the category "Labour Market Inactivity" was recoded. The JEP data set begins with age 1 until age in the year of interview. On average, the respondents left school at the age of 17.03 (SD 4.7) years and entered retirement at the age of 58.70 (SD 5.96) years; therefore, the age frame was encompassed to years 15 to 60. As the study aims to analyse adverse employment patterns, persons without an employment record, i.e. with no employment years at all, were dropped from the sample. However, in the final sample this affected only 66 women and no men. Women with very few years are included the sample and, hence, are adequately represented.

Table 1: Percentage of time spent in various employment status categories from ages 15 to 60 years

Employment status	Men	Women	Total (%)
Education	6.11	5.32	5.71
Full-time employment	81.79	53.58	67.72
Part-time employment	0.79	9.60	5.18
Unemployment	0.88	1.43	1.15
Labour market inactivity	5.19	22.96	14.05
Retirement	5.24	7.05	6.14
Total (%)	100	100	100

Table 1 shows the percentages of time spent in the six employment statuses by gender. For instance, during the 45 years observed here, men spent 6.11% of this time in educational/training programmes. Women spent slightly less time in educational/training programmes (5.32%) beyond the age of 15. Throughout the observational period, men

used to analyse well-being and other sociodemographic variables in this wave. The sample is constructed by identifying first retired persons in wave 2. Then information about employment history is added to this sample.

spent more than 80% in full-time employment, while this is the case for slightly more than half (53.58%) of the women. In addition, women experienced more part-time employment, slightly more unemployment and significantly more labour market inactivity. They also spent a higher proportion of time in retirement.

Table 2 summarises the dependent and control variables that are used in the ordinary least squares (OLS) regression analysis. Subjective well-being is the dependent variable and is measured by life satisfaction on a 0-10 rating scale; 10 being the most positive satisfaction with life. Life satisfaction is a measure of subjective well-being that evaluates the life as whole and, therefore, integrates long-term developments and not only immediate positive or negative affect (Diener, 1984). This aspect makes it highly appropriate to study long-term consequences of disadvantages. Here, the effect of timing and duration of adverse employment patterns are studied separately while controlling for socio-demographic variables that are related to life satisfaction. These include current age and logged pension income. Pension income has been adjusted to the exchange rate and purchase power parity of 2006 Euros. Education is a recoded ordinal variable (low, medium, high) from the ISCED classification. A dummy is used to indicate if a partner lives in the household, and the score of limitations in daily activities (ADL) proxies for health. Although the educational level often indicates if the entry to labour market was earlier (low education) or later (high education), it cannot capture whether there are breaks between education and beginning the first job. Therefore, age at first job is included. The same applies to age at last job. This variable indicates when a person left the labour market. Retirement age, however, would only indicate the age at entry to retirement, which is not age at last job in about 10% of the female sample, but only less than 4% of the male sample.

Table 2: Descriptive statistics of variables in the OLS analysis

	Men				Women			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Life satisfaction	7.65	1.66	0	10	7.42	1.85	0	10
Age	66.31	5.61	50	75	65.21	5.97	50	75
Education	1.74	0.77	1	3	1.65	0.73	1	3
Pension income	1247	1171	0	19810	867	896	0	11083
Living with a partner	0.86	0.34	0	1	0.64	0.48	0	1

Number of children	2.20	1.33	0	12	2.18	1.35	0	13
Physical limitations	0.15	0.64	0	6	0.19	0.70	0	6
Age first job	18.67	3.93	15	56	19.18	5.42	15	60
Age last job	59.07	5.97	14	75	56.36	8.59	13	74

Optimal Matching and Clustering

Sequence analysis is gaining increasing attention to study life-course and career patterns and has been widely recognised as a valuable tool box (Abbott & Hrycak, 1990; Abbott & Tsay, 2000; Billari & Piccarreta, 2005). Even though this method is mostly explorative and less aimed at causal explanation, it allows researchers to trace life courses entirely, unveiling dynamic processes that are hidden to other methods in life-course research (like event history analysis). Numerous studies have employed sequence analysis to study different trajectories in the life course, e.g. school-to-work transitions (Anyadike-Danes & McVicar, 2010; Brzinsky-Fay, 2007; Dorsett & Lucchino, 2014; Manzoni & Mooi-Reci, 2001), work-family trajectories (Aassve, Billari, & Piccarreta, 2007; Elzinga & Liefboer, 2007; Gauthier, Widmer, Bucher, & Notredame, 2010; Hofäcker & Chaloupková, 2014), occupational mobility (Biemann, et al., 2011; Groh-Samberg & Hertel, 2011; Kogan & Weißmann, 2013) and retirement transitions (Fasang, 2012; Madero-Cabib, 2015).

In order to categorise careers and create distinguishable patterns, two analytical steps are performed. First, optimal matching is used to the identify dissimilarity of sequences between individuals. These operations are based on the assumption that the life courses of persons are more similar if it takes less effort or costs to transform one sequence into another. Optimal matching uses three operations to transform a sequence so it resembles another sequence: substitution, insertion and deletion. If sequences are very different from each other, many operations have to be executed. An operation is charged with certain costs; therefore, performing many operations is costly. Whereas in earlier research cost matrices were criticised as highly arbitrary (Aisenbrey & Fasang, 2010; Wu, 2000), Stata's *sq-ado* (Brzinsky-Fay, Kohler, & Luniak, 2006) is able to derive costs from the data structure itself. In this study we use the *sqom* command with a cost matrix that derives the costs from the inverse proportionality of the transition to certain states. In other words, the less frequently a state can be found (e.g. unemployment), the more costly the operation. The costs are transformed to a dissimilarity matrix which can be used for further analysis. The next step is to cluster sequences based on the dissimilarity matrix and create homogenous groups.

Because the employment histories differ between men and women, all analyses including optimal matching and clustering are performed separately by gender. In addition, Ward's hierarchic algorithm, widely used for clustering, is taken into consideration because it tends to generate clusters with similar group size. Specifically, the clusters should have a minimum variance inside the cluster (intracluster-homogeneity) and a maximum variance across clusters (intercluster-heterogeneity). While the selection of number of clusters might be subjective, it is, however, not arbitrary. The researcher has to follow theoretical considerations and the research questions. Stata offers additional help with its stopping rules, although they do not present a 'Golden Rule'. The Calinski/Harabasz or the Duda/Hart criterion shows the ratio of within-cluster and between-cluster variation. The higher the number, the more appropriate the cluster solution. For the male sample the Calinski/Harabaz criterion suggested a 4 cluster solution. The Duda/Hart criterion had the highest value for the 3 cluster solution. In the female sample, the results were not straightforward, as the complexity of the female employment careers oscillated between a 5, 7 and 14 cluster solution. The stopping rules are a proposal to choose the number of clusters, but additional graphical analysis is always necessary. Hence, the six cluster solution was chosen for women to achieve a more comprehensive categorization.

Results

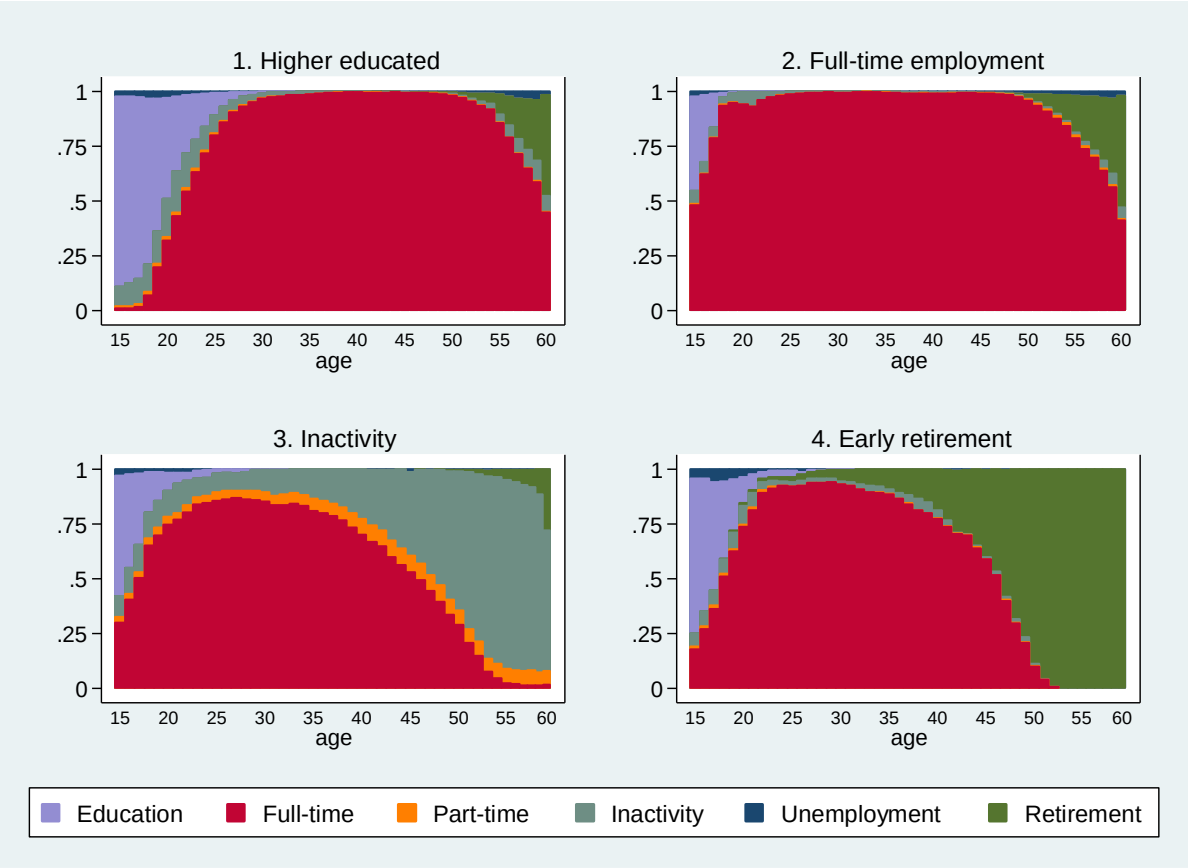
Sequence analysis of career patterns

The results of the optimal matching and clustering are presented in Figure 1 and Figure 2. Additionally, the Table A1 and Table A2 in the Appendix show descriptive statistics of the clusters. They have been derived with straightforward OLS analysis without covariates, where significance of mean differences is tested. Figure 1 shows state distribution plots for men and the 4-cluster solution. State distribution plots show, at each age, the distribution of employment statuses. Unlike sequence index plots, where the sequences of each individual are stringed chronologically, state distribution plots reduce individual information to general proportions thus facilitating readability and interpretation. Four quite distinctive clusters of employment careers are revealed. The first cluster includes persons who have been mostly employed full-time with the highest number of educational years, but not the highest number of working years and jobs ("Higher Educated" Cluster 1). On average, the education of these persons consisted of 12.93 years of schooling or training. They worked fewer full-time hours and experienced more inactive years than the second cluster. Cluster 2 ("Full-time Employment") includes persons who have mainly had a full-time employment career and is the largest cluster. Cluster 3 ("Inactivity") includes persons with the largest share of labour market inactivity and part-time work, mainly towards the end of the career. They work, on

average, only about 25 years in full-time employment. Additionally, they show the least life satisfaction on average and exit the labour market to retire later than members of the other clusters. The last cluster ("Early retirement" Cluster 4) includes men who experienced early retirement, with most of the persons in this cluster retiring after age 50, even though they have worked for more years than the members of the "Inactivity" cluster. From a comparative perspective, two clusters show imbalances in their composition by country. The "Inactivity" cluster (Cluster 3) is largely dominated by Poland and the Netherlands. The "Early retirement" cluster (Cluster 4) is largely composed of men from the Southern and Eastern European states. These results provide us with hints about the differences in social and labour market policies across welfare states, for example, in early retirement schemes (Ebbinghaus, 2006).

In Table 3 life satisfaction of clusters per country is displayed. Compared to the first cluster "Higher Educated", which could be presumably the highest advantaged group, no major differences in life satisfaction are found for the largest cluster "Full-time employment". Only in Greece and the Czech Republic do men experience a disadvantage in well-being if they had "only" a full-time career. Having had a career with inactivity has particularly large disadvantages in Austria, Germany, Sweden and the Czech Republic, but it is also shown to be detrimental for well-being in two Southern States. In the last cluster "Early Retirement" it becomes clear that although heavily enforced the association between early labour exit and life satisfaction is strongly negative in Germany and Austria. This is also true for Sweden and Denmark, where old age employment is typically promoted.

Fig. 1: State distribution plots of men's four-cluster solution

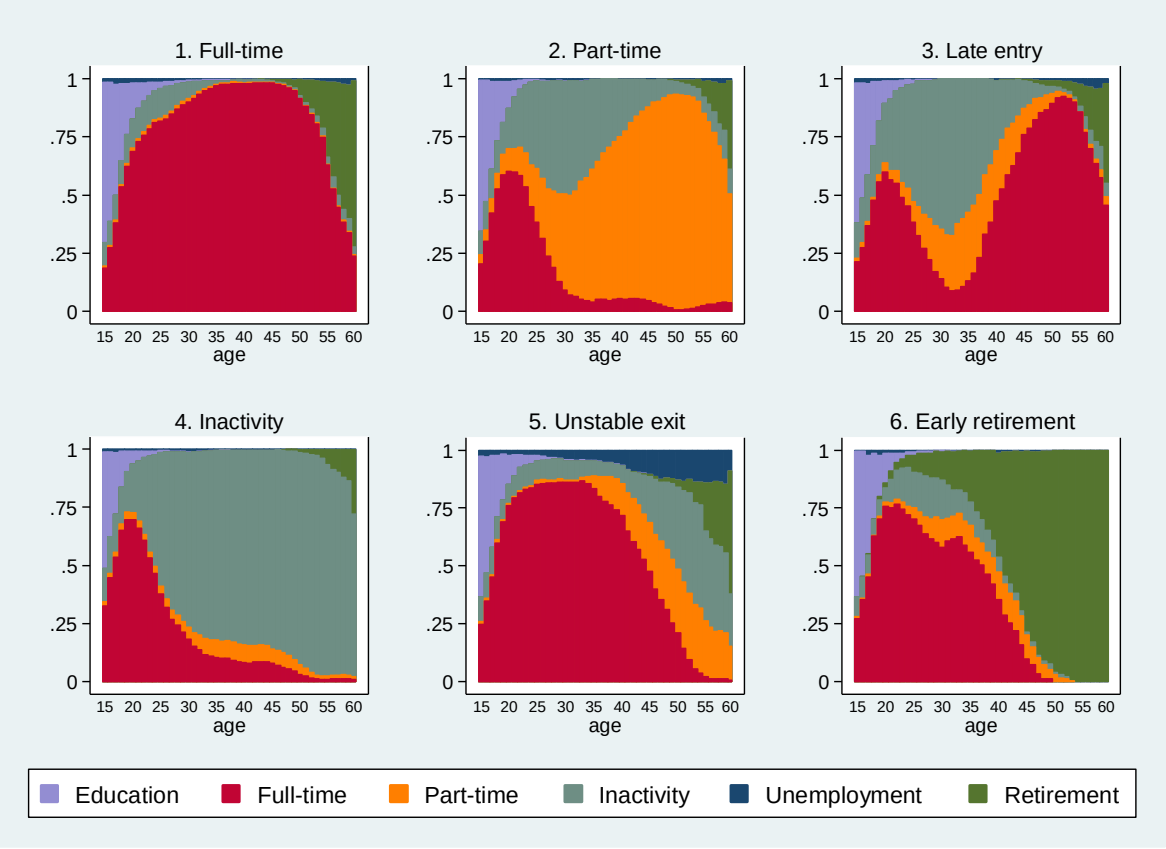


The cluster solution for women resulted in 6 clusters. Women experienced more turbulent careers with more variation of non-employment and part-time work. Cluster 1 (“Full-time”), which is the largest cluster, is similar to men’s full-time employment and includes the most full-time hours worked on average. About 37% of women in this cluster are from Poland and the Czech Republic, reflecting the tradition of full-time employment for women in these countries. The second cluster (“Part-time”) comprises women who mostly remained in part-time employment throughout their career. More than a third of these women are from conservative welfare states like Germany, Netherlands and Switzerland, but are also represented by women from the socio-democratic welfare states Sweden and Denmark. Cluster 3 (“Late Entry”) summarises careers with delayed labour market entry, and is evidenced by patterns of large inactivity at the beginning of the working life. About 50% of women do not enter full-time employment until the age of 40.

In Cluster 4 (“Inactivity”), the majority of women show a stable pattern of labour market inactivity. More than 60% of this cluster is composed of conservative welfare states. The women in this cluster have the least education as indicated by number of years in schooling. Cluster 5 (“Unstable exit”) includes women who have stable employment until

their forties, but then transition to non-employment and part-time work. The last cluster ("Early retirement") includes women who entered the labour market mostly on full-time employment, but by the age of 45 have almost all left the labour market to retirement. Individuals from Southern welfare states are more frequently found in this last cluster than in the other clusters, while women from conservative welfare states are more often found in the "Unstable exit" and "Part-time" clusters. This finding is in line with previous research.

Fig. 2: State distribution plots of women's six-cluster solution



The relation of life satisfaction and career types is not straightforward for women. While deviations from the standard full-time employment are mainly negative for men, the high variation in career types is also offering possibilities to integrate employment and care duties for women. Table 4 shows that the "Part-time" career is positively associated to subjective well-being of women in Germany and Sweden.

Table 3: Life satisfaction by clusters for men

	AT	DE	NL	FR	CH	BE	IT	ES	GR	SE	DK	CZ	PL
	Coefficient (SE)												
Higher Educated (Ref.)													
Full-time employment	-0.65 (0.41)	-0.16 (0.17)	-0.08 (0.12)	-0.22 (0.16)	-0.27 (0.22)	-0.01 (0.13)	-0.07 (0.15)	-0.03 (0.29)	-0.33** (0.16)	-0.05 (0.15)	-0.13 (0.17)	-0.34* (0.19)	-0.27 (0.26)
Inactivity	-2.12** (0 .87)	-1.34*** (0.50)	-0.41*** (0.16)	-0.27 (0.31)	-0.46 (0.38)	-0.79*** (0.22)	-0.86** (0.34)	-0.65 (0.48)	-0.44 (0.41)	-1.53*** (0.52)	-0.21 (0.41)	-1.24** (0.57)	-0.85*** (0.29)
Early retirement	-1.66* (1.00)	-2.09*** (0.53)	-0.60 (0.49)	0.55 (0.40)		-0.77* (0.43)	0.41 (0.29)	-0.15 (0.50)	-0.01 (0.27)	-1.03** (0.44)	-1.51*** (0.35)	-0.80** (0.33)	0.56 (0.37)
R^2	0.05	0.05	0.02	0.01	0.01	0.03	0.02	0.00	0.01	0.04	0.05	0.03	0.04
N	164	391	374	367	190	502	599	293	387	336	377	367	405

Note: ***p<=0.010; **p<=0.050; *p<=0.100

Similar to the results of the male sample, careers with large proportion outside the labour market are negatively related to women. The effects are significant for France, Belgium and Poland. If we look at the exit from the labour market, the last two clusters comprise women with an atypical exit. The first includes persons that experienced inactivity, unemployment or part-time employment after a long full-time engagement. The relation to life satisfaction is, however, mixed and affects only the Eastern European countries. Also the "Early retirement" clusters show mixed effects. Outstanding is Italy, in which for women leaving the labour market early have a positive effect for life satisfaction, a counterintuitive finding.

To summarize, while the relation of life satisfaction to career types is very plausible in men's careers, the variation of women' careers is generating no common patterns. Since the effects are association and we lack macro variables, causal relations could be spurious. Surprisingly, compared to labour market inactivity, unemployment does not play a significant role in the career patterns of men and women. While this could be due to the economically prosperous periods the persons in the sample where living in, it could also be an artefact of retrospective data (episodes shorter than 6 months), memory bias or hidden unemployment as mentioned by Erlinghagen and Knuth (2010). The same is true for the retirement phases. Early retirement might be the result of unemployment or sickness. In the sequence analysis this is not easy to differentiate. Therefore, one needs to keep in mind the possibilities of sequence analysis and its limitations. In order to find more reliable association between patterns of instabilities and life satisfaction in old age, it is necessary to add control variables that might be responsible for the variation in life satisfaction.

Timing and duration analysis of non-employment and part-time work for subjective well-being

Sequence analysis revealed how non-employment and part-time work are distributed throughout the careers of men and women in Europe. Specifically, men's and women's careers differ in the variation of adverse employment patterns, as well as in the timing and the duration of these patterns. However, the cluster solutions for each gender do not provide us with a straightforward link to subjective well-being and adverse career patterns. Although men in the cluster with the highest labour market inactivity report the lowest life satisfaction on average, this association becomes spurious when looking at the more complex clusters of women. Therefore, in the OLS regression, the key socio-demographic variables that are known to be correlated with life satisfaction are controlled for. Hence, a part of heterogeneity can be ruled out.

Table 4: Life satisfaction by clusters for women

	AT	DE	NL	FR	CH	BE	IT	ES	GR	SE	DK	CZ	PL
							Coefficient (SE)						
Full-time (Ref.)													
Part-time	0.33	0.36*	0.14	0.17	-0.18	0.10	0.06	-0.16	-0.77	0.33*	0.22	-0.65	-0.99
	(0.42)	(0.25)	(0.21)	(0.36)	(0.29)	(0.30)	(0.33)	(1.02)	(0.55)	(0.19)	(0.22)	(0.69)	(0.81)
Late entry	0.09	0.20	-0.08	0.49	0.15	-0.21	-0.16	-0.81	0.05	0.33	0.27	-0.07	-0.11
	(0.48)	(0.35)	(0.28)	(0.33)	(0.37)	(0.33)	(0.39)	(0.52)	(0.33)	(0.21)	(0.23)	(0.43)	(0.49)
Inactivity	-0.38	0.27	-0.09	-0.82***	-0.00	-0.65***	0.20	-0.16	-0.56	-0.29	0.30	0.07	-0.65**
	(0.37)	(0.24)	(0.19)	(0.23)	(0.27)	(0.18)	(0.22)	(0.36)	(0.35)	(0.27)	(0.26)	(0.62)	(0.28)
Unstable exit	-0.41	0.33	-0.00	-0.47	-0.17	-0.09	0.12	-0.09	-0.72	-0.17	0.16	-0.99***	0.51**
	(0.53)	(0.30)	(0.27)	(0.35)	(0.39)	(0.21)	(0.35)	(0.65)	(0.45)	(0.25)	(0.28)	(0.38)	(0.25)
Early retirement	-0.91	0.04	0.10	-0.41	0.65	0.04	0.95***	1.59	0.33	-0.79	-0.61**	-0.99***	-0.61
	(0.65)	(0.59)	(0.43)	(0.48)	(0.71)	(0.31)	(0.35)	(1.41)	(0.36)	(0.52)	(0.27)	(0.37)	(0.48)
R^2	0.02	0.01	0.01	0.05	0.01	0.03	0.02	0.03	0.03	0.03	0.03	0.02	0.02
N	191	337	391	391	237	443	388	157	290	416	385	631	506

Note: ***p<=0.010; **p<=0.050; *p<=0.100

In the following analyses, to address country-level differences, all variables except dummies are standardized with a mean equal to zero and standard deviation equal to one. Results are shown separately for men and women. The full tables (Table A3 for men and Table A4 for women) can be found in the Appendix. The first three columns (1a to 1c) report the results of stepwise testing for effects of timing and translation of non-employment and non-standard work. Model 2 tests the effects of duration. In Table 5, three dummy variables indicate if unemployment, labour market inactivity or part-time has been experienced for each age range (i.e. 15-24 years, 25-49 years, 50-60 years). As these models try to capture timing effects, dummies, and not the sum of years, are used. Model 1a tests for negative effects of non-employment and part-time work at the beginning of the career. The results indicate that men who experienced unemployment at entry to work show lower life satisfaction. This effect is larger when the next age range is added (Model 1b), but it does not persist into old age (Model 1c). For labour market inactivity, only a significant negative effect is found for the last partition of the career, while inactivity at younger age is positively associated with well-being. Another significant effect in Model 1c is age at last job, which is not necessarily the retirement age. A late exit is associated with an increase in life satisfaction in retirement. This could reflect the health situation at exit and thereafter. Persons with ill health will presumably leave the labour market earlier.

Model 2 shows the results for the duration and number of non-employment and part-time employment phases. The reason to look at the number of episodes and their average length is to capture not only the frequency of non-employment and non-standard work, but also the effect of duration. In the duration analysis, labour market inactivity is negatively associated with life satisfaction with increasing number and average length of time in these phases. No significant association of life satisfaction and duration of unemployment or part-time work for is found for men. In Model 3 and 4 the analyses are repeated with CASP-12, an indicator of quality of life that was created for older persons (Hyde, Wiggins, Higgs, & Blane, 2003; Wiggins, Higgs, Hyde, & Blane, 2004). Complementary to life satisfaction it captures a different dimension of well-being and serves as a robustness check for the results. The findings in the last two models repeat the already established results largely and pick up a negative effect of part-time employment in the mid-ages.

Table 6 shows the results for women. Models 1a and 1b do not reveal significant effects of adverse employment in young and middle ages. In Model 1c, labour market inactivity in the last part of the career is negatively associated with life satisfaction in old age. Corresponding to the men's sample, later labour market exit is positively related to life satisfaction. The models of duration show that more episodes of inactivity have a negative effect. The unemployment duration analysis yields no significant results, but both

coefficients are negative. Concerning part-time work, more episodes show a positive effect on life satisfaction, despite the finding that the length of part-time episodes have a negative effect on well-being. This indicates that shorter, but frequent periods of part-time employment could be more beneficial from a long-term perspective. Also in the women's sample does CASP-12 confirm the negative results of non-employment and part-time episodes and reveals additionally the negative effects of unemployment and part-time work. While life satisfaction is considered an evaluative aspect of well-being and hence describes general effects, the quality of life indicator shows stronger effects for the well-being in old age. The results of the robustness check illustrate that the disadvantageous employment history might impact dimensions of old age in particular.

The coefficients of timing and duration analyses in four welfare regimes, i.e. socio-democratic, conservative, southern and post-socialist, are shown in Tables 7 and 8. This classification loosely follows Esping-Andersen's (1990) welfare typology and Ferrera's (1996) addendum with the Eastern European countries as post-socialistic regimes. The results of the analyses reflect mostly the results of the common sample. However, disadvantages do not have a uniform effect on the different welfare regimes. The Southern states do not show any positive relation of early inactivity for men, but they do so for women. However, the experience of unemployment in early and mid-ages has a large detrimental effect for men's' life satisfaction in these states, which could reflect the difficulty of the insider/outsider issue. Part-time work also shows a differential effect throughout the types. While it is beneficial at early ages in socio-democratic countries, it reflects probably a difficulty of full-time employment in post-transitional Eastern European countries. Women, like shown in Table 4, show positive values for socio-democratic and conservative countries. In these countries part-time work serves as rather flexible compromise for women to integrate employment and family duties. This is also confirmed as only in the conservative states also the number of spells of part-time employment is positive.

Table 5: Analysis of subjective well-being of men

	Model 1a	Model 1b	Model 1c	Model 2	Model 3 CASP-12	Model 4 CASP-12
			Coefficient (SE)			
Age first job	0.01 (0.01)	0.02 (0.02)	0.01 (0 .02)		0.03 (0.02)	
Inactivity: 15-24 years	-0.05 (0.04)	-0.04 (0.03)	0.12* (0.06)		0.15*** (0.04)	
Inactivity: 25-49 years		-0.11 (0.08)	-0.01 (0.09)		-0.11 (0.08)	
Inactivity: 50-60 years			-0.20*** (0.07)		-0.24*** (0.05)	
Unemployment: 15-24 years	-0.12* (0.06)	-0.11* (0.06)	-0.11* (0.06)		-0.08 (0.06)	
Unemployment: 25-49 years		-0.22 (0.14)	-0.24* (0.13)		-0.27** (0.11)	
Unemployment: 50-60 years			0.07 (0.06)		0.05 (0.03)	
Part-time: 15-24 years	0.01 (0.11)	0.05 (0.15)	0.05 (0.14)		0.04 (0.09)	
Part-time: 25-49 years		-0.12 (0.13)	-0.07 (0.13)		-0.28* (0.14)	
Part-time: 50-60 years			-0.12 (0.11)		0.12 (0.10)	
Age last job	0.04 (0.02)	0.04 (0.02)	0.05* (0.03)		0.06** (0.02)	
Number of inactivity episodes				-0.05*** (0.02)		-0.06*** (0.01)
Number of unemployment episodes				-0.01 (0.02)		0.00 (0.02)
Number of part-time episodes				-0.03 (0.02)		-0.00 (0.02)
Average length of inactivity episodes				-0.04* (0.02)		-0.05* (0.02)
Average length of unemployment episodes				-0.01 (0.02)		-0.03 (0.02)
Average length of part-time episodes				0.01 (0.03)		-0.01 (0.02)
R^2	0.09	0.09	0.10	0.09	0.11	0.10
N	4,186	4,186	4,186	4,186	4,186	4,186

Note: ****p*<=0.010; ***p*<=0.050; **p*<=0.100, robust standard errors clustered by country; adjusted for country, cohort, age, age², living with a partner, number of children, educational level, physical limitations, logged individual pension income. All numerical values are standardised with *M* = 0 and *SD* = 1.

Table 6: Analysis of subjective well-being of women

	Model 1a	Model 1b	Model 1c	Model 2	Model 3 CASP-12	Model 4 CASP-12
			Coefficient (SE)			
Age first job	-0.03 (0.02)	-0.03 (0.02)	-0.03 (0.02)		-0.02 (0.01)	
Inactivity: 15-24 years	0.01 (0.04)	0.00 (0.04)	0.00 (0.04)		-0.01 (0.03)	
Inactivity: 25-49 years		-0.02 (0.04)	0.01 (0.04)		0.02 (0.04)	
Inactivity: 50-60 years			-0.10** (0.05)		-0.12*** (0.03)	
Unemployment: 15-24 years	0.06 (0.10)	0.10 (0.09)	0.11 (0.09)		0.04 (0.06)	
Unemployment: 25-49 years		-0.15 (0.09)	-0.12 (0.10)		0.03 (0.09)	
Unemployment: 50-60 years			-0.08 (0.07)		-0.16*** (0.05)	
Part-time: 15-24 years	0.04 (0.06)	0.05 (0.06)	0.06 (0.07)		0.07 (0.07)	
Part-time: 25-49 years		-0.04 (0.04)	-0.07 (0.05)		-0.11** (0.05)	
Part-time: 50-60 years			0.02 (0.06)		0.07 (0.04)	
Age last job	0.03 (0.02)	0.03* (0.02)	0.04* (0.02)		0.03 (0.02)	
Number of inactivity episodes				-0.06*** (0.01)		-0.05** (0.02)
Number of unemployment episodes				-0.01 (0.02)		-0.03 (0.02)
Number of part-time episodes				0.03* (0.02)		0.01 (0.02)
Average length of inactivity episodes				0.02 (0.02)		0.02 (0.02)
Average length of unemployment episodes				-0.02 (0.01)		0.01 (0.01)
Average length of part-time episodes				-0.03* (0.01)		-0.00 (0.01)
R^2	0.10	0.10	0.11	0.10	0.10	0.10
N	3,912	3,912	3,912	3,912	3,912	3,912

Note: ***p<=0.010; **p<=0.050; *p<=0.100, robust standard errors clustered by country; adjusted for country, cohort, age, age², living with a partner, number of children, educational level, physical limitations, logged individual pension income. All numerical values are standardised with M = 0 and SD = 1.

Table 7: Analysis of life satisfaction by welfare regime for men

	Socio-Democratic	Conser-vative	Southern	Post-transitional	Socio-Democratic	Conser-vative	Southern	Post-transitional
	Coefficient (SE)							
Age first job	0.03 (0.04)	-0.02 (0.03)	0.09* (0.03)	-0.02 (0.02)				
Inactivity: 15-24 years	0.18* (0.03)	0.20* (0.09)	-0.07 (0.05)	0.08* (0.01)				
Inactivity: 25-49 years	-0.05 (0.22)	0.07 (0.10)	-0.11 (0.21)	0.15 (0.05)				
Inactivity: 50-60 years	-0.19 (0.16)	-0.26 (0.13)	-0.15** (0.02)	-0.04 (0.05)				
Unemployment: 15-24 years	-0.64** (0.04)	0.20 (0.19)	-0.26* (0.07)	-0.10 (0.07)				
Unemployment: 25-49 years	-0.18 (0.54)	-0.05 (0.17)	-0.54** (0.12)	0.25 (0.19)				
Unemployment: 50-60 years	0.13 (0.16)	0.02 (0.06)	0.18 (0.10)	0.02 (0.90)				
Part-time: 15-24 years	0.69* (0.09)	-0.28 (0.25)	0.01 (0.09)	-0.53 (0.43)				
Part-time: 25-49 years	-0.24 (0.09)	0.06 (0.20)	0.17 (0.28)	0.68 (0.38)				
Part-time: 50-60 years	0.11 (0.35)	-0.15 (0.13)	-0.32 (0.21)	-0.64* (0.04)				
Age last job	0.16 (0.04)	0.07* (0.03)	-0.02 (0.01)	-0.02 (0.07)				
Number of inactivity episodes					-0.01 (0.03)	-0.06** (0.02)	-0.09*** (0.01)	0.03 (0.04)
Number of unemployment episodes					-0.03 (0.09)	0.03 (0.03)	-0.06 (0.03)	-0.01 (0.01)
Number of part-time episodes					0.07 (0.12)	-0.05 (0.03)	-0.04 (0.01)	-0.07 (0.04)
Average length of inactivity episodes					-0.06 (0.02)	-0.02 (0.03)	-0.01 (0.03)	-0.05 (0.02)
Average length of unemployment episodes					0.07 (0.02)	-0.02 (0.02)	-0.01 (0.05)	-0.05 (0.09)
Average length of part-time episodes					-0.05 (0.13)	0.02 (0.03)	0.04 (0.02)	0.04 (0.01)

R^2	0.20	0.12	0.10	0.09	0.17	0.11	0.09	0.09
N	571	1805	1203	607	571	1805	1203	607

Note: ***p<=0.010; **p<=0.050; *p<=0.100, robust standard errors clustered by country; Adjusted for country, cohort, age, age², living with a partner, educational level, physical limitations, logged individual pension income. All numerical values are standardised with mean of zero and SD equal to one.

Table 8: Analysis of life satisfaction by welfare regime for women

	Socio-Democratic	Conser-vative	Southern	Post-transitional	Socio-Democratic	Conser-vative	Southern	Post-transitional
				Coefficient (SE)				
Age first job	-0.04 (0.02)	-0.02 (0.05)	-0.04 (0.09)	-0.03** (0.00)				
Inactivity at 15-24	0.05 (0.03)	-0.06 (0.05)	0.21*** (0.01)	-0.08 (0.14)				
Inactivity at 25-49	0.06*** (0.00)	0.08 (0.08)	-0.17 (0.09)	0.03 (0.14)				
Inactivity at 50-60	-0.08 (0.04)	-0.21** (0.05)	0.17* (0.04)	-0.15 (0.10)				
Unemployment at 15-24	0.38 (0.55	0.10 (0.17)	0.17 (0.11)	-0.14 (0.07)				
Unemployment at 25-49	-0.30* (0.04)	-0.00 (0.14)	0.11 (0.15)	-0.22 (0.14)				
Unemployment at 50-60	0.12 (0.04)	-0.09 (0.07)	-0.54 (0.35)	-0.28 (0.30)				
Part-time at 15-24	0.06 (0.15)	0.20** (0.07)	-0.18 (0.12)	-0.02 (0.28)				
Part-time at 25-49	-0.19 (0.09)	-0.07 (0.06)	0.07 (0.16)	0.08 (0.06)				
Part-time at 50-60	0.11 (0.02)	-0.04 (0.09)	0.02 (0.33)	-0.11 (0.12)				
Age last job	0.03* (0.00)	0.05* (0.02)	-0.03 (0.02)	0.05 (0.04)				
Number of inactivity spells					-0.04 (0.01)	-0.06* (0.03)	0.02 (0.04)	-0.03 (0.02)
Number of unemployment spells					0.00 (0.12)	0.01 (0.03)	0.02 (0.05)	-0.06** (0.00)
Number of part-time					-0.02 (0.05)	0.05* (0.02)	0.02 (0.03)	0.08 (0.06)

spells								
Average length of inactivity spells					0.06 (0.02)	0.00 (0.03)	0.06 (0.03)	-0.01 (0.05)
Average length of unemployment spells					0.01 (0.09)	-0.02 (0.01)	-0.00 (0.05)	-0.04* (0.01)
Average length of part-time spells					-0.00 (0.01)	-0.03 (0.02	-0.01 (0.05)	-0.06 (0.05)
R^2	0.10	0.13	0.16	0.15	0.09	0.12	0.14	0.15
N	625	1644	691	952	625	1644	691	952

Note: ***p<=0.010; **p<=0.050; *p<=0.100, robust standard errors clustered by country; Adjusted for country, cohort, age, age², living with a partner, educational level, physical limitations, logged individual pension income. All numerical values are standardised with mean of zero and SD equal to one.

Discussion

Explanation of findings

This paper studied cumulative disadvantages of non-employment and non-standard work over the life course utilising a sequence analysis of the careers of men and women in Europe. Findings revealed that, in line with previous research, careers of men and women differ in the occurrence and length of non-employment and part-time employment. Whereas optimal matching and clustering of careers resulted in four clusters for men, that showed mainly full-time employment careers, women experienced a higher variation in career types with higher incidence of labour market inactivity and part-time work. While the male sample experienced inactivity and part-time employment mainly at the end of the career, sequence analysis showed that especially labour market inactivity among women can be found in almost every stage of a woman's career. However, sequence analysis cannot tell us whether these labour market exits and entries in women's lives were voluntary or not. Hence, the association of life satisfaction to the six different clusters is not clear. Therefore, linear regression analyses incorporating the timing of occurrence of non-employment and part-time work and the average duration and number of periods were performed. These analyses demonstrated that, for both genders, labour market inactivity at the end of the career and with increasing number of episodes and length (for men only) is negatively related to life satisfaction in old age. As there is few research on the negative effects of labour market inactivity, this finding is remarkable. Unemployment shows only significant effects in the male sample and only in the timing analysis. However, the results suggest that early disadvantages are translated to later ages. This effect is not found in the women's sample. Hence, the first hypothesis can be partially rejected. The large, negative effects of labour market inactivity should be investigated further, under the premise of disentangling this heterogeneous label. The results for part-time employment show the double-sidedness of part-time work. They are only significant for women and are, in line with previous research, not entirely negative. Short episodes could be positive and might help women to reconcile work and family, but longer episodes lead to lower life satisfaction. As careers of men and women are different in different country contexts, further comparative analyses were carried out. They showed that certain careers, according to expectations, are more often found in particular welfare regimes. Hence, there is a larger gender bias in conservative welfare regimes that rely stronger on a main breadwinner tradition and also in Southern welfare states, where women have larger family duties. In comparison, women in socio-democratic regimes and in former socialistic states have higher labour participation though for different reasons. Deviation from full-time employment are henceforth differently experienced in these different contexts.

Strengths and limitations

According to the theory of cumulative advantages/disadvantages, ill-timed or repeated exposure to disadvantages leads to inequality in old age. However, although a large body of literature and the present analyses confirm negative effects of unemployment, a potential endogeneity bias has to be addressed. The causality of lower life satisfaction and unemployment cannot be uncovered with the present OLS analysis of subjective well-being. Some of the cited studies, however, could identify the negative exogenous effect of unemployment. Hence, the results are plausible, but should be interpreted as associations. Further, it was not possible, due to the lengthy computation processes and missing information, to disentangle the heterogeneous category labour market inactivity. It may include many different reasons for joblessness, among them disability, care or military service. Although it shows significant negative effects, the causal relation is unclear and could be reversed. That means that lower life satisfaction could lead to joblessness. However, further research is needed to study this category and its effect on well-being. The country variation was addressed by comparing results by countries and regimes, however it was not possible to address policies and institutional measures.

This paper contributes to the literature on cumulative disadvantages in that it studies disadvantages from a process perspective (sequence analysis of careers) and from an outcome perspective (inequality in subjective well-being). It emphasises the timing of disadvantages and duration of exposure. The retrospective SHARE data provides an excellent platform to study the entire careers of individuals and not only parts of them. Two methods were applied to evaluate the effects of non-employment and non-standard work over the life course. They are used in a complementary manner, as sequence analysis is an advanced tool to study the life course - not only graphically. It presents comprised and comprehensible information, but is limited in terms of causality and reproduction of results. Thus, an analysis of subjective well-being was included to enrich the study by investigating the effect of adverse employment. While significance tests and control variables are limited in sequence analysis, the OLS regression provides validation of results.

Disclaimer

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Conflict of interest

The author declares no conflict of interest

Appendix

Table A1: Employment history of men by cluster

	(1) Higher educated	(2) Full-time employment	(3) Inactivity	(4) Early retirement
	Mean (SE)			
Educational years	12.93 (0.58)	8.91 (0.65)	9.74 (0.50)	10.15 (0.43)
Full-time working years	36.27 (0.33)	42.05 (0.32)	25.24 (0.92)	28.14 (0.91)
Part-time working years	0.24 (0.05)	0.17 [n.s.] (0.03)	2.41 (0.83)	0.26 [n.s.] (0.08)
Unemployment years	0.54 (0.13)	0.40 [n.s.] (0.08)	0.24 (0.06)	0.59 [n.s.] (0.14)
Inactive years	2.20 (0.41)	0.76 (0.07)	14.56 (0.66)	1.14 (0.13)
Number of jobs	2.64 (0.21)	3.21 (0.25)	2.91 (0.17)	2.30 (0.24)
Retirement age	60.42 (0.41)	59.48 (0 .62)	61.73 (0.47)	44.56 (0.79)
Life satisfaction	7.87 (0.14)	7.64 (0.14)	6.95 (0.28)	7.35 (0.17)
N	1,735	2,442	372	250

Note: n.s. $p>0.100$, standard errors are clustered by countries.

Table A2: Employment history of women by cluster

	(1) Full-time	(2) Part-time	(3) Late entry	(4) Inactivity	(5) Unstable exit	(6) Early retirement
			Mean (SE)			
Educational years	10.71 (0.46)	9.96 (0.53)	10.12 (0.60)	9.03 (0.57)	10.32 (0.53)	10.42 n.s. (0.33)
Full-time working years	36.64 (0.58)	7.29 (0.36)	23.51 (0.89)	9.13 (0.32)	24.52 (0.89)	19.03 (1.51)
Part-time working years	0.39 (0.08)	24.77 (0.57)	5.34 (1.06)	2.03 (0.42)	5.50 (1.45)	3.26 (0.82)
Unemployment years	0.19 (0.13)	0.31 n.s (0.06)	0.48 n.s. (0.11)	0.27 n.s. (0.06)	3.39 (0.65)	0.64 n.s. (0.17)
Inactive years	2.42 (0.38)	10.23 (0.50)	13.12 (1.59)	31.74 (0.44)	7.83 (0.75)	3.28 n.s. (0.44)
Number of jobs	2.42 (0.18)	3.39 (0.23)	3.05 (0.33)	2.12 (0.12)	3.02 (0.28)	2.61 n.s. (0.53)
Retirement age	57.00 (0.69)	60.68 (0.56)	59.94 (0.52)	61.13 (0.52)	58.64 (0.57)	39.69 (0.79)
Life satisfaction	7.32 (0.18)	7.99 (0.17)	7.74 (0.27)	7.32 n.s. (0.22)	7.21 n.s. (0.31)	7.27 n.s. (0.26)
N	2,237	533	398	932	459	232

Note: n.s. $p>0.100$, standard errors are clustered by countries.

A3: Full table for men

	Model 1a	Model 1b	Model 1c	Model 2	Model 3 CASP-12	Model 4 CASP-12
			Coefficient (SE)			
Age first job	0.01 (0.01)	0.02 (0.02)	0.01 (0 .02)		0.03 (0.02)	
Inactivity: 15-24 years	-0.05 (0.04)	-0.04 (0.03)	0.12* (0.06)		0.15*** (0.04)	
Inactivity: 25-49 years		-0.11 (0.08)	-0.01 (0.09)		-0.11 (0.08)	
Inactivity: 50-60 years			-0.20*** (0.07)		-0.24*** (0.05)	
Unemployment: 15-24 years	-0.12* (0.06)	-0.11* (0.06)	-0.11* (0.06)		-0.08 (0.06)	
Unemployment: 25-49 years		-0.22 (0.14)	-0.24* (0.13)		-0.27** (0.11)	
Unemployment: 50-60 years			0.07 (0.06)		0.05 (0.03)	
Part-time: 15-24 years	0.01 (0.11)	0.05 (0.15)	0.05 (0.14)		0.04 (0.09)	
Part-time: 25-49 years		-0.12 (0.13)	-0.07 (0.13)		-0.28* (0.14)	
Part-time: 50-60 years			-0.12 (0.11)		0.12 (0.10)	
Age last job	0.04 (0.02)	0.04 (0.02)	0.05* (0.03)		0.06** (0.02)	
Number of inactivity episodes				-0.05*** (0.02)		-0.06*** (0.01)
Number of unemployment episodes				-0.01 (0.02)		0.00 (0.02)
Number of part-time episodes				-0.03 (0.02)		-0.00 (0.02)
Average length of inactivity episodes				-0.04* (0.02)		-0.05* (0.02)
Average length of unemployment episodes				-0.01 (0.02)		-0.03 (0.02)
Average length of part-time episodes				0.01 (0.03)		-0.01 (0.02)
Age	0.41 (1.03)	0.39 (1.01)	0.34 (1.02)	0.58 (1.05)	-0.18 (0.84)	0.21 (0.93)
Age^2	-0.42 (1.01)	-0.41 (1.00)	-0.36 (1.00)	-0.58 (1.03)	0.18 (0.81)	-0.17 (0.89)
Living with a partner	0.37*** (0.05)	0.36*** (0.05)	0.36*** (0.05)	0.36*** (0.05)	0.14** (0.06)	0.15** (0.06)
Children	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)	-0.02 (0.02)	-0.02 (0.02)

Education						
Ref.: Low)						
Middle	0.09* (0.04)	0.08 (0.05)	0.09* (0.05)	0.09 (0.05)	0.13*** (0.03)	0.13*** (0.04)
Higher	0.16*** (0.05)	0.16*** (0.05)	0.17*** (0.05)	0.18*** (0.04)	0.11** (0.05)	0.13** (0.05)
Cohort						
(Ref.: 1930)						
1935	0.01 (0.09)	0.01 (0.09)	0.01 (0.09)	0.01 (0.09)	0.05 (0.06)	0.05 (0.06)
1940	-0.03 (0.15)	-0.03 (0.15)	-0.03 (0.15)	-0.03 (0.15)	0.13 (0.09)	0.14 (0.08)
1945	-0.08 (0.15)	-0.08 (0.15)	-0.08 (0.15)	-0.08 (0.14)	0.14 (0.11)	0.14 (0.10)
1950	-0.08 (0.18)	-0.08 (0.18)	-0.08 (0.18)	-0.10 (0.17)	0.10 (0.26)	0.08 (0.26)
Physical limitations	-0.23*** (0.02)	-0.22*** (0.02)	-0.22*** (0.02)	-0.23*** (0.02)	-0.23*** (0.03)	-0.23*** (0.03)
Logged pension income	0.11*** (0.02)	0.10*** (0.02)	0.10*** (0.02)	0.10*** (0.02)	0.09*** (0.02)	0.09*** (0.02)
Country						
(Ref: Austria)						
Germany	-0.04*** (0.01)	-0.04** (0.01)	-0.04** (0.02)	-0.05*** (0.01)	0.03*** (0.01)	0.01 (0.01)
Netherlands	0.03 (0.02)	0.03 (0.02)	0.06** (0.02)	0.02 (0.02)	0.16*** (0.02)	0.10*** (0.02)
France	0.04 (0.03)	0.04 (0.03)	0.05 (0.03)	0.02 (0.02)	0.16*** (0.02)	0.12*** (0.02)
Switzerland	0.03 (0.03)	0.03 (0.03)	0.03 (0.03)	0.02 (0.03)	0.14*** (0.02)	0.12*** (0.02)
Belgium	0.04 (0.03)	0.04 (0.03)	0.07* (0.03)	0.03 (0.03)	0.12*** (0.03)	0.08*** (0.02)
Italy	0.05 (0.03)	0.06 (0.03)	0.06 (0.03)	0.03 (0.03)	0.11*** (0.03)	0.08** (0.03)
Spain	0.09* (0.04)	0.09* (0.04)	0.06** (0.03)	0.09* (0.04)	0.24*** (0.03)	0.22*** (0.04)
Greece	0.06 (0.04)	0.05 (0.04)	0.05 (0.04)	0.03 (0.03)	0.14*** (0.03)	0.11*** (0.03)
Sweden	0.00 (0.04)	0.01 (0.04)	0.02 (0.04)	-0.01 (0.04)	0.05* (0.02)	0.02 (0.03)
Denmark	-0.02 (0.03)	-0.01 (0.03)	-0.01 (0.03)	-0.04 (0.02)	0.11 (0.02)	0.06*** (0.01)
Czech Republic	0.07*** (0.02)	0.07*** (0.02)	0.06** (0.02)	0.07** (0.02)	0.11*** (0.02)	0.11*** (0.02)
Poland	0.11** (0.049	0.12** (0.04)	0.14*** (0.05)	0.07* (0.03)	0.17*** (0.04)	0.08** (0.03)
R^2	0.09	0.09	0.10	0.09	0.11	0.10
N	4,186	4,186	4,186	4,186	4,186	4,186

Note: ***p<=0.010; **p<=0.050; *p<=0.100, robust standard errors clustered by country; All numerical values are standardised with M = 0 and SD = 1.

Table A4: Full table for women

	Model 1a	Model 1b	Model 1c	Model 2	Model 3 CASP-12	Model 4 CASP-12
			Coefficient (SE)			
Age first job	-0.03 (0.02)	-0.03 (0.02)	-0.03 (0.02)		-0.02 (0.01)	
Inactivity: 15-24 years	0.01 (0.04)	0.00 (0.04)	0.00 (0.04)		-0.01 (0.03)	
Inactivity: 25-49 years		-0.02 (0.04)	0.01 (0.04)		0.02 (0.04)	
Inactivity: 50-60 years			-0.10** (0.05)		-0.12*** (0.03)	
Unemployment: 15-24 years	0.06 (0.10)	0.10 (0.09)	0.11 (0.09)		0.04 (0.06)	
Unemployment: 25-49 years		-0.15 (0.09)	-0.12 (0.10)		0.03 (0.09)	
Unemployment: 50-60 years			-0.08 (0.07)		-0.16*** (0.05)	
Part-time: 15-24 years	0.04 (0.06)	0.05 (0.06)	0.06 (0.07)		0.07 (0.07)	
Part-time: 25-49 years		-0.04 (0.04)	-0.07 (0.05)		-0.11** (0.05)	
Part-time: 50-60 years			0.02 (0.06)		0.07 (0.04)	
Age last job	0.03 (0.02)	0.03* (0.02)	0.04* (0.02)		0.03 (0.02)	
Number of inactivity episodes				-0.06*** (0.01)		-0.05** (0.02)
Number of unemployment episodes				-0.01 (0.02)		-0.03 (0.02)
Number of part-time episodes				0.03* (0.02)		0.01 (0.02)
Average length of inactivity episodes				0.02 (0.02)		0.02 (0.02)
Average length of unemployment episodes				-0.02 (0.01)		0.01 (0.01)
Average length of part-time episodes				-0.03* (0.01)		-0.00 (0.01)
Age	-0.34 (0.78)	-0.30 (0.76)	-0.25 (0.78)	-0.17 (0.80)	-0.23 (0.66)	-0.12 (0.67)
Age^2	0.43 (0.74)	0.39 (0.73)	0.34 (0.75)	0.27 (0.77)	0.27 (0.63)	0.17 (0.64)
Living with a partner	0.42*** (0.03)	0.42*** (0.03)	0.42*** (0.03)	0.42 (0.03)	0.25*** (0.03)	0.25*** (0.03)
Children	0.04** (0.02)	0.04** (0.02)	0.04** (0.02)	0.04 (0.02)	0.00 (0.02)	-0.00 (0.02)

Education (Ref.: Low)						
Middle	0.15**(0.06)	0.15** (0.06)	0.15** (0.06)	0.14** (0.06)	0.11*** (0.04)	0.11** (0.05)
Higher	0.19*** (0.06)	0.18*** (0.05)	0.18*** (0.06)	0.15*** (0.05)	0.24*** (0.06)	0.24*** (0.07)
Cohort (Ref.: 1930)						
1935	0.06 (0.09)	0.06 (0.09)	0.05 (0.09)	0.06 (0.09)	0.12 (0.07)	0.12 (0.07)
1940	0.20 (0.13)	0.20 (0.13)	0.19 (0.13)	0.21 (0.13)	0.23** (0.09)	0.23** (0.09)
1945	0.25* (0.14)	0.26* (0.14)	0.25* (0.14)	0.26* (015)	0.31*** (0.09)	0.32*** (0.09)
1950	0.15 (0.19)	0.18 (0.19)	0.17 (0.19)	0.16 (0.20)	0.22* (0.10)	0.22* (0.11)
Physical limitations	-0.22*** (0.02)	-0.22*** (0.02)	-0.21*** (0.02)	-0.22*** (0.02)	-0.23*** (0.03)	-0.23*** (0.03)
Logged pension income	0.06** (0.02)	0.06** (0.02)	0.05** (0.02)	0.06** (0.02)	0.06** (0.02)	0.06** (0.02)
Country (Ref: Austria)						
Germany	-0.14*** (0.02)	-0.14*** (0.02)	-0.12*** (0.02)	-0.14*** (0.02)	-0.09*** (0.02)	-0.12*** (0.01)
Netherlands	-0.05* (0.03)	-0.04 (0.03)	-0.01 (0.03)	-0.05* (0.02)	-0.04 (0.02)	-0.07*** (0.02)
France	0.03 (0.02)	0.03 (0.02)	0.04 (0.03)	0.03 (0.02)	0.04* (0.02)	0.03* (0.01)
Switzerland	0.03 (0.02)	0.03 (0.02)	0.04* (0.02)	0.02 (0.02)	0.01 (0.02)	-0.01 (0.02)
Belgium	-0.00 (0.02)	-0.01 (0.02)	0.02 (0.02)	0.00 (0.01)	-0.06*** (0.02)	-0.07*** (0.01)
Italy	-0.04 (0.02)	-0.04 (0.02)	-0.04* (0.02)	-0.03 (0.02)	-0.04 (0.03)	-0.03 (0.03)
Spain	0.10** (0.04)	0.09** (0.04)	0.10** (0.04)	0.09** (0.04)	0.04 (0.04)	0.02 (0.03)
Greece	0.09*** (0.03)	0.08** (0.03)	0.06* (0.03)	0.10*** (0.02)	-0.01 (0.03)	0.02 (0.02)
Sweden	-0.03 (0.03)	-0.02 (0.03)	-0.03 (0.03)	-0.03 (0.03)	-0.06** (0.02)	-0.05** (0.02)
Denmark	-0.04 (0.02)	-0.02 (0.02)	-0.02 (0.03)	-0.03* (0.02)	0.00 (0.02)	-0.02 (0.01)
Czech Republic	-0.02 (0.02)	-0.04* (0.02)	-0.05* (0.03)	-0.03 (0.02)	-0.06* (0.03)	-0.03* (0.02)
Poland	-0.09** (0.04)	-0.10** (0.04)	-0.09** (0.04)	-0.09** (0.04)	-0.09* (0.04)	-0.08** (0.03)
R^2	0.10	0.10	0.11	0.10	0.10	0.10
N	3,912	3,912	3,912	3,912	3,912	3,912

Note: ***p<=0.010; **p<=0.050; *p<=0.100, robust standard errors clustered by country; All numerical values are standardised with M = 0 and SD = 1.

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